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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/334,386
Filing Date: June 16, 1999
Appellant(s): WIEDEMAN ET AL.

Anthony W. Karambelas
For Appellant

EXAMINER'S ANSWER

MAILED

JUN 29 2004

Technology Center 2600

This is in response to the appeal brief filed May 3, 2004.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

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A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 1-17, 26-39 do stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

6,215,776	Chao	10-1997
6,134,423	Wiedeman et al.	12-1997
5,528,693	Leopold	06-1996

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-7, 10, 15-17, 26-30, 33, 37-39 are rejected under 35 U.S.C. 102(e) as being anticipated by Chao US 6,215,776.

Regarding claims 1, 6, 7, 15-17, 29-30, 37-39, the claimed satellite communication system comprised of a plurality of satellites and a plurality of gateways is anticipated by system (Figure 1, element 10) with plurality of satellites (elements 12, 14, and 16) and plurality of gateways (elements 20, 24 and 32). The claimed terrestrial communications system is disclosed by network (element 26) and the claimed plurality of nodes including source nodes, destination nodes and intermediate nodes is disclosed by terminals (elements 22, 28, 30, 36), satellites and gateways. The claimed multiple copies are selectively generated within network based on criteria is disclosed by system parameters including availability of satellites to link the source and destination gateways which takes into account a direction of transmission—uplink and downlink. The claimed multiple copies of a packet coexist within the network and are routed, using at least in part satellite-resident routers and gateway-resident routers, over a plurality of different paths between a particular source and destination node is disclosed by source terminal (Figure 1, element 30) transmitting multiple copies of the same packet (Figure 4, element 70) using gateways and satellites over different paths (Figure 1, elements, 42, 44, 46, 48). The claimed duplicate copy of packet not used during the execution of packet reordering in the destination node or intermediate node is disclosed by destination gateway (Figure 1, element 34) recognizing packets as repeated packets by examination of payload information which includes sequence numbers (Figure 4). See column 5, lines 66-67 and column 6, lines 1-15.

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Regarding claims 2, 26, the claimed satellite-to-satellite cross-links are anticipated by paths (Figure 1, element 48).

Regarding claims 3, 26, the claimed satellite-to-gateway uplinks and downlinks are anticipated by paths (Figure 1, elements 42, 44, 46).

Regarding claims 4, 27, the claimed satellite-to-user terminal uplink and downlink is anticipated by paths (Figure 1, elements 42 and 46).

Regarding claims 5, 10, 28, 33, the claimed TCP/IP or equivalent packets are disclosed by communication between terminals following Ipv4 or Ipv6 and containing payload with sequence numbers and session information. See column 3, lines 34-38, column 5, lines 66-67 and column 6, lines 1-15.

Claims 8-9, 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chao.

Chao discloses all the limitations of the claims except for the claimed constellation of low earth orbit and medium earth orbit satellites. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the system of Chao with low earth orbit and medium earth orbit satellites. One of ordinary skill in the art would be motivated to do this since they are more recently developed satellites that are not synchronized with the earth's rotation and vary widely in terms of orbital paths and altitudes.

Claim 11-14, 34-35 are rejected under 35 U.S.C. 103(a) as being obvious over Chao in view of Wiedeman et al. US 6,134,423.

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The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Regarding claims 11,12, 34-35, Chao discloses all the limitations of the claims except for the claimed packets comprising voice data and routing of voice data over semi-permanent paths. Wiedeman et al. discloses packetized voice signals communicating via uplinks and downlinks through return and forward satellite transponders. See Figure 3A. At the time it would have been obvious to a person of ordinary skill in the art to modify system of Chao to have packets comprising voice data and routing over semi-permanent

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paths. One of ordinary skill in the art would be motivated to do this for proper routing of voice communications through the appropriate satellites.

Regarding claims 13-14, Chao discloses all the limitations of the claims except for vocoded voice data that is generated external to a user terminal and that is input to the user terminal for transmission and vocoded voice data that is generated internal to a user terminal for transmission. Wiedeman et al. discloses a CDMA sub-system (Figure 5, element 52) including a vocoder (element 53k) that is external to the terminal and Wiedeman et al. discloses a user terminal (Figure 6, element 13) in a satellite communication system (Figure 1, element 10) comprising a vocoder (element 13c) for digitizing a user's speech. See column 10, lines 49-57. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to modify system of Chao to transmit vocoded voice data generated external and internal to a user terminal. One of ordinary skill in the art would be motivated to do this for digitizing speech from a mobile that is external to the system or for efficiently digitizing voice within the same device.

Claim 36 is rejected under 35 U.S.C. 103(a) as being obvious over Chao in view of Wiedeman et al. US 6,134,423 in further view of Leopold US 5,528,693.

Regarding claim 36, Chao and Wiedeman et al., in combination, disclose all the limitations of the claims except for packets comprising encrypted voice data. Leopold discloses telecommunications system utilizing low-earth orbit satellites (Figure 1, element 14) with voice encryption system (Figure 3). At the time the invention was made it would have been obvious to modify the satellite system of Chao and Wiedeman et al.

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with satellite system including voice encryption system of Leopold. One of ordinary skill in the art would be motivated to do this privacy and confidentiality for subscribers in communications system. See column 1, lines 13-19 and column 4, lines 1-11.

(11) Response to Argument

Examiner agrees with all the details of the references, Chao and Wiedeman et al., and the instant Application, as provided by the Applicants on pages 3-5. However, the arguments regarding the art rejection on pages 5-13 are not persuasive for the following reasons.

According to Applicants' arguments on page 7, nowhere in Figure 1, element 10, elements 12, 14 and 16, elements 20, 24, 32, element 26, elements 22, 28,30, 36, Figure 1, element 30, Figure 5, element 70, Figure 1, elements 42, 44,46,48, Figure 1, element 34, Figure 4 or at column 5, lines 66-67 and column 6, lines 1-15 of Chao '776 is there any teaching, suggestion or implication that multiple copies of a packet are selectively generated within a data communications network based on a criteria that includes at least one of (a) whether the packet was previously duplicated by a previous node and (b) a direction of transmission, from source to destination or from destination to source, hereinafter referred to as (a) and (b), and wherein at least one duplicate copy of a given packet is not used during the execution of a packet reordering procedure in the destination node or at an intermediate node as required by claim 1 of the instant invention and the other claims at issue. Specifically, Applicants' argue against Examiner's rejection using Chao '776 of claimed subject matter of selective generation of multiple copies of packet based on a direction of transmission, from source to destination or from

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destination to source and at least one duplicate copy of packet not used during reordering procedure at destination node or at an intermediate node.

Examiner's response to the above arguments is as follows. Chao '776 discloses that in order to enhance communication reliability on links with lower quality of service, a source terminal can choose to transmit multiple copies of the same packet to the destination gateway. The destination gateway can recognize these repeated packets during reordering by way of the payload of the packet which includes identical session identification and sequence numbers in order to not include two of the same packet in reordering procedure. Examiner would like to direct Applicants' attention to column 5, lines 20-29 and column 6, lines 1-15 of Chao. According to Examiner's interpretation, it is Examiner's belief the above disclosures of Chao teach limitations of selectively generated multiple copies of packet and at least one duplicate copy of a given packet is not used during the execution of packet reordering procedure. Additionally, Examiner would like to direct Applicants' attention to disclosure of above mentioned enhancement of communication reliability and payload of repeated packets in Chao '776, column 5, lines 39-58. It is disclosed the payload includes ordered data from a source terminal directed towards a destination terminal and a gateway in the communication system requesting an optimal payload length from a satellite which evaluates system and communication parameters including priority, hop count, number of hops required, error rates, available satellites to link source and destination gateways and cost of service. Therefore, Examiner believes Chao '776 teaches multiple copies of a packet being selectively generated based on a direction of transmission, from source to destination or from destination to source.

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According to Applicants' arguments on pages 7-8 regarding claims 2 and 26, although Applicants do not necessarily agree Chao '776 discloses claimed subject matter of satellite-to-satellite cross links, nevertheless the rejection fails for the reasons of the conspicuous absence of employing criteria (a) and (b) as recited and the requirement one duplicate copy of given packet is not used during execution as required in claims 2 and 26. Examiner response to Applicants' arguments is to refer above to Examiner's response to claimed subject matter of generation of multiple copies based on criteria and one duplicate copy not used during execution. Respectfully, Examiner also would like to point out, regarding Applicants' arguments regarding claims 2 and 26 and the conspicuous absence of employing criteria (a) and (b), that the claimed subject matter discloses employing **at least one of** criteria (a) and (b).

According to Applicants' arguments on page 8 regarding claims 3 and 26, although Applicants do not necessarily agree Chao '776 discloses claimed subject matter of satellite-to-gateway uplinks and downlinks, nevertheless claims are patentably distinguishable over Figure 1, elements 42, 44, 46 and remainder of Chao disclosure for the reasons relating to the conspicuous absence of criteria including (a) and (b) as recited and the requirement one duplicate copy of given packet is not used during execution. Examiner response to Applicants' arguments is to refer above to Examiner's response to claimed subject matter of generation of multiple copies based on criteria and one duplicate copy not used during execution. Respectfully, Examiner also would like to point out, regarding Applicants' arguments regarding claims 3 and 26 and the conspicuous absence of criteria that includes (a) and (b), that the claimed subject matter discloses employing **at least one of** criteria (a) and (b).

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According to Applicants' arguments on page 8 regarding claims 4 and 27, although Applicants do not necessarily agree Chao '776 discloses claimed subject matter of satellite-to-user terminal uplink and downlink, nevertheless claims are patentably distinguishable over Chao disclosure for the reasons relating to the conspicuous absence of criteria including (a) and (b) as recited and the requirement one duplicate copy of given packet is not used during execution. Examiner's response to Applicants' arguments is to refer above to Examiner's response to claimed subject matter of generation of multiple copies based on criteria and one duplicate copy not used during execution. Respectfully, Examiner also would like to point out, regarding Applicants' arguments regarding claims 4 and 27 and the conspicuous absence of criteria that includes (a) and (b), that the claimed subject matter discloses employing **at least one of** criteria (a) and (b).

According to Applicants' arguments on page 8-9 regarding claims 5, 10, 28, and 33, Chao does not disclose claimed TCP/IP or equivalent packets and further said claims are patentably distinguishable over Chao disclosure for the reasons relating to the conspicuous absence of criteria including (a) and (b) as recited and the requirement one duplicate copy of given packet is not used during execution. Examiner's response to argument is as follows. Chao '776 disclose communication between terminals following Ipv4 or Ipv6 and packets having payload containing sequence numbers. TCP is a protocol where because a single message is broken into many packets, packets are marked with sequence numbers before sending them for proper reassembling and IP is the messenger protocol of TCP/IP, basically for addressing and sending packets. Additionally, Examiner would like to refer Applicants' to above Examiner's response to

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claimed subject matter of generation of multiple copies based on criteria and one duplicate copy not used during execution. Respectfully, Examiner also would like to point out, regarding Applicants' arguments regarding claims 5, 10, 28, and 33 and the conspicuous absence of criteria that includes (a) and (b), that the claimed subject matter discloses employing **at least one of** criteria (a) and (b).

According to Applicants' arguments on page 9 regarding claims 8-9, 31-32, the rejection under 35 U.S.C. 103 (a) as being unpatentable over Chao regarding low earth orbit and medium earth orbit satellites is not proper and further said claims are patentably distinguishable over Chao disclosure for the reasons relating to the conspicuous absence of criteria including (a) and (b) as recited and the requirement one duplicate copy of given packet is not used during execution. Examiner's response to Applicants' arguments is as follows. Chao discloses satellites in non-geostationary orbits. Examiner contends this includes low earth and medium earth orbit satellites. Examiner would like to direct Applicants to column 3, lines 5-11 of Chao '776. Additionally, Examiner would like to refer Applicants' to above Examiner's response to claimed subject matter of generation of multiple copies based on criteria and one duplicate copy not used during execution. Respectfully, Examiner also would like to point out, regarding Applicants' arguments regarding claims 8-9 and 31-32 and the conspicuous absence of criteria that includes (a) and (b), that the claimed subject matter discloses employing **at least one of** criteria (a) and (b).

According to Applicants' arguments on page 9-10 regarding claims 11-14, 34-36, although Applicants' do not agree Wiedeman et al. '423 teaches voice data and routing over semi-permanent paths and Applicants contend claims are patentably distinguishable

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over Chao disclosure for the reasons relating to the conspicuous absence of criteria including (a) and (b) as recited and the requirement one duplicate copy of given packet is not used during execution. Examiner's response to Applicants' arguments is as follows. Wiedeman et al. disclose gateway using power control information in order for power density of antenna not to exceed a certain threshold and to terminate the connection if threshold is exceeded which teaches claimed semi-permanent links. Additionally, Examiner would like to refer Applicants' to above Examiner's response to claimed subject matter of generation of multiple copies based on criteria and one duplicate copy not used during execution. Respectfully, Examiner also would like to point out, regarding Applicants' arguments regarding claims 11-14, 34-36 and the conspicuous absence of criteria that includes (a) and (b), that the claimed subject matter discloses employing **at least one of** criteria (a) and (b).

According to Applicants' arguments on page 11-12 regarding claims 13-14, Applicants' disagree Wiedeman et al. '423 teaches voice data comprising vocoded data that is generated external to a user terminal and that input to the user terminal for transmission to at least one satellite and vocoded voice data that is generated internal to user terminal. Examiner's response to Applicants' argument is as follows. Wiedeman et al. '423 disclose a CDMA sub-system (Figure 5) in a gateway including a vocoder which is not located in user terminal and discloses user terminal including a variable rate vocoder. See column 10, lines 49-57. Additionally, Examiner directs Applicants' to Figure 2 providing location of CDMA sub-system in gateway.

According to Applicants' arguments on page 12 regarding claim 36, Applicants disagree with Examiner that there is any basis in either of Chao or Wiedeman et al. to

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support contention that it would have been obvious to a person of ordinary skill in the art to have packets comprising encrypted voice data or that one of ordinary skill in the art would be motivated to do this for security purposes as contended in official notice by Examiner and further said claims are patentably distinguishable over Chao disclosure for the reasons relating to the conspicuous absence of criteria including (a) and (b) as recited and the requirement one duplicate copy of given packet is not used during execution.

Examiner's response to Applicants' arguments is as follows. Examiner submits reference Leopold which discloses communication system including low-earth orbit satellites with a voice encryption system in response to Applicant's argument against official notice taken by Examiner regarding obviousness of encryption of voice data packets. The voice encryption system of Leopold provides privacy and confidentiality for subscribers in communication system. Additionally, Examiner would like to refer Applicants' to above Examiner's response to claimed subject matter of generation of multiple copies based on criteria and one duplicate copy not used during execution. Respectfully, Examiner also would like to point out, regarding Applicants' arguments regarding claim 36 and the conspicuous absence of criteria that includes (a) and (b), that the claimed subject matter discloses employing **at least one of** criteria (a) and (b).

For the above reasons, it is believed that the rejections should be sustained.

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Respectfully submitted,

^{ms}
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June 25, 2004

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